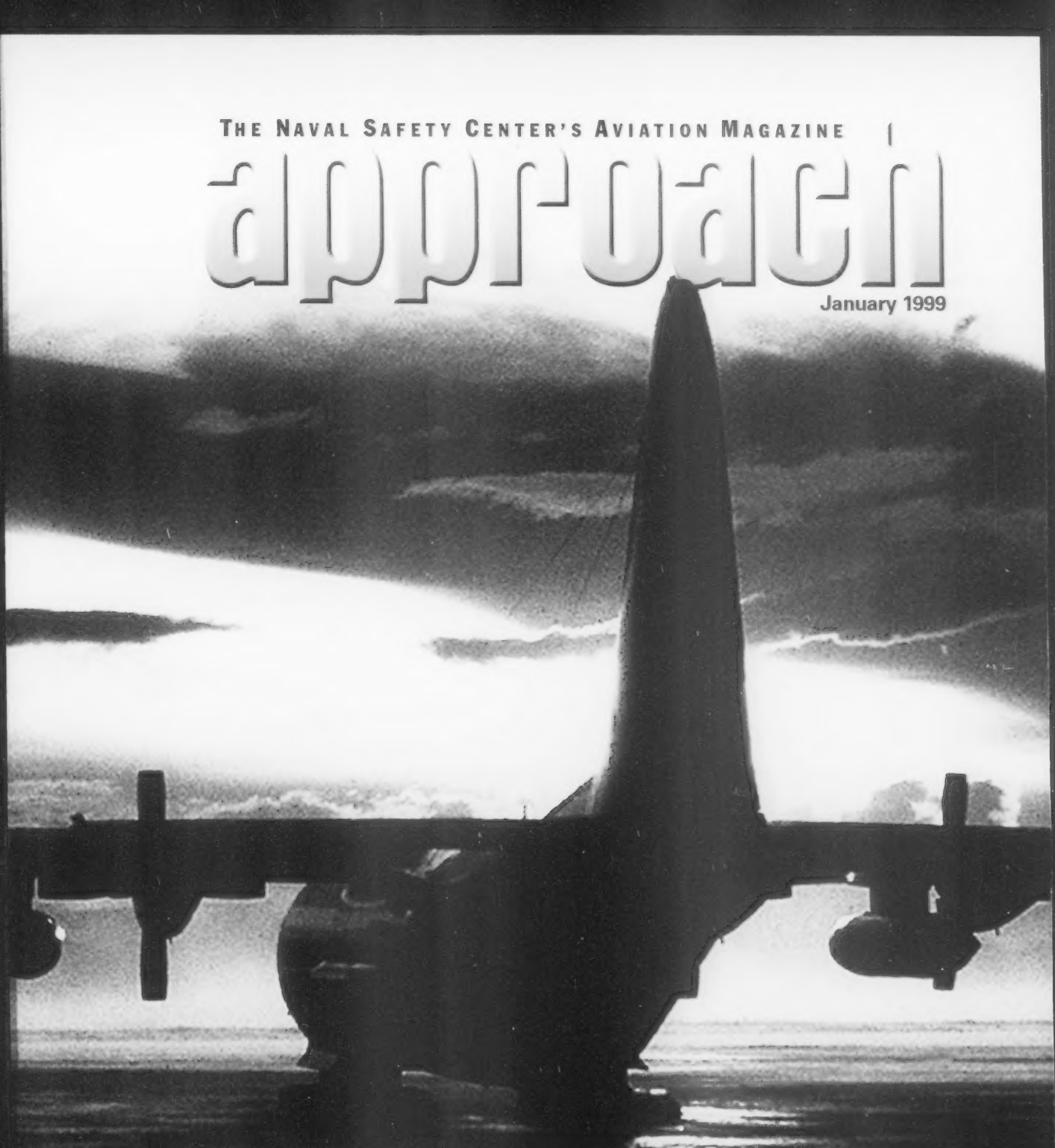
THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

January 1999



McMurdo's Winter Vacation Package

Three Blind Mice

Groundhog Day in Souda Bay

approach contents

January 1999	The Naval Safety Center's
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On the cover	VXE-6 Herks on the ice at sunset. *Photo by PH1 (NAC) Edward G. Martens*
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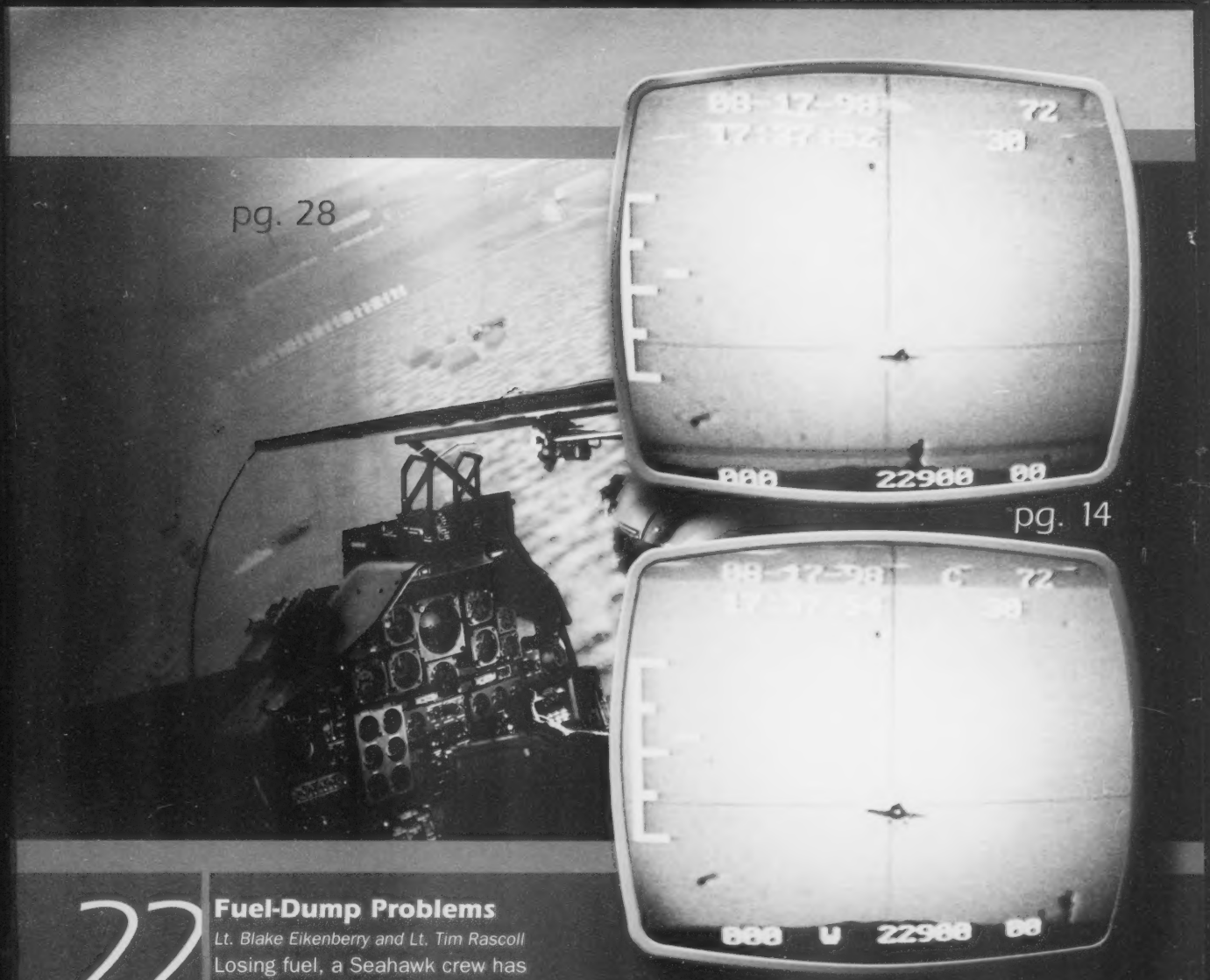

departments

Farewell to the Ice Pirates

WHEN VXE-6 DECOMMISSIONS THIS APRIL, it will close 44 years of service to the Navy and the large scientific community dedicated to scientific research. Commissioned as VX-6 in January 1955 (VXE-6 as of January 1969), Antarctic Development Squadron Six moved people and supplies to military and civilian units that deployed to the cold, lonely continent at the bottom of the world. It was not an easy job, and the crews knew they had earned their blue-and-white Antarctic-deployment ribbons.

Through many trips to the ice, the squadron flew both fixed-wing and rotary-wing aircraft, including various models of C-47s, C-54s, C-117s, C-121s, P-2s, C-130s, and H-1s. Sporting colorful paint schemes to make them more visible against the area's white expanses, these aircraft, and their crews, supported many international operations in some of the planet's most inhospitable weather and terrain.

The crews had to be the best, and over the years, we have published several articles by these skilled aviators.

In this issue, we include one final whiteout-landing story. Although such a landing is not the only unique experience shared by the squadron's crews, it typifies their collective service and the hazards of flying in this theater.

Thanks to all the past and present members of VXE-6 for their support and for sharing their one-of-a-kind stories with us and the fleet for these many years.

Peter Mersky

McMurdo's Winter Vacation Package

(Including Their Fabulous Whiteout Landing!)

by LCdr. Mark Hinebaugh

THERE WAS NOTHING TO SEE—no ground, no sky, no horizon, only white. And while we were supposed to be heading into the wind with only a slight left drift, we were being batted about so much that the wings were fluttering like the wings of a dragonfly, not a 25-ton heavy transport. The normal noise of the plane, the banter of the crew, the roar of the engines were gone, obscured by the wind and the snow that it pushed so hard against the windscreen that sounded like a sand blaster.

Eight hours earlier during our brief for a fuel-tanker mission to the South Pole, the forecasters had suggested that, while it was true that the weather had been deteriorating steadily for several hours here at McMurdo Station, it would improve significantly for our return. Therein lies the nut of polar operations: the inaccurate weather brief. No one could predict the weather there. The forecasters were optimists, but then, they didn't have to fly.

I phoned the ODO, arguing that I felt the weather would continue to worsen, and that I thought our flight should be canceled. He agreed. A few minutes later the phone rang. The duty officer for Naval Support Forces Antarctica (NSFA) had overruled his decision and wanted us to get on with it, having cleared it with our skipper.

I found the CO and offered my opinion of the weather and explained that I wasn't comfortable flying. I said the present weather was well below squadron SOP minimums (at 200 and 1/4), and I felt the forecast was a little shady at 1,000 and 3, SOP minimums. I asked if he would fly?

He told me the SOPs existed so we could fly missions, not cancel them. He said to get on with it.

PH1 (NAC) Edward G. Martens

At the skiway, conditions were 200 and 1/2. I called weather. They said the winds would die down as the evening progressed. Even as we talked, the conditions at the field deteriorated. I was skeptical when the forecaster told me that the weather for our return from the pole would be fine at 1,000 feet and 3 miles. Over the INET (our local radio network), the weather controller, obviously feeling pressured to come up with an accurate forecast, called our shuttle-bus driver for a report. She looked at me, shrugged her shoulders, smiled, and said she could see 68 flags (red and green flags that mark the snow road to Willy, which are unevenly spaced, but generally 3 to 5 feet apart), whatever that meant. The forecaster acknowledged the report then dropped off the line.

I wondered if the forecasters were now basing their predictions on haphazard, arbitrary counts of flags by bus drivers.

I signed the ADB as the senior maintenance-control chief shook his head and said he wouldn't be caught dead flying in this. I handed him the book, and said I hoped we wouldn't be, either.

We climbed through the maelstrom and hit clean, blue air at 6,000 feet. The winds flowed over Black Island, pushing a wall of white onto the ice shelf. I didn't like to think about it, but I knew that it wouldn't be getting any better soon.

Out on the ice shelf, the winds didn't seem as malicious, but they certainly weren't calm. Masses of swirling clouds formed what appeared to be a hurricane. When we landed at the South Pole, there was a very obscure line that barely passed as a horizon line, but no surface definition. We touched down hard half way down the skiway after fighting with the power, trying desperately to judge where the ground was.

To an Antarctic pilot contrast is everything. Once the sun is behind the clouds, there are no shadows. The white clouds blend with the snow, reducing all landings to best guesses.

We filled our time on the return trip by cursing the forecasters as each hourly observation at McMurdo had the ceiling and visibility dropping and the winds increasing.

Over Black Island, in our descent, for the GCA, the news was grim. The weather had suddenly dropped to zero-zero. The wind had picked up to 38 knots from grid northwest, driving snow into a moving fog.

We opted for a GCA approach to skiway 25. Close to the deck at 200 feet, we were surrounded by swirling white, and monstrous flakes pelted the windscreen.

> I wrestled with the yoke. I have rarely been nervous while flying, but I was this time. My head hurt, and I had to fight back the foul taste of vomit. We were all very quiet. We never saw the ground.

John W. Williams

My arms were getting tired. We had about 12 miles in which to land the plane. Beyond that, we risked running into a crevasse field...

The wind kicked us hard from the right side, but it felt like we were being pushed and pulled from all sides at once. The plane shuddered as it rose and fell in the turbulence. One second we would be 100 feet low on glide slope, the next 300 feet high. Airspeed was a best guess, altitude a joke. Gusts hit one side, throwing the wing straight up, then pitching the other wing down. Sometimes it felt as if the whole plane was trying to spin about the longitudinal axis.

I wrestled with the yoke. I have rarely been nervous while flying, but I was this time. My head hurt, and I had to fight back the foul taste of vomit. We were all very quiet. We never saw the ground. Once, we powered up and climbed on our missed approach, the winds lifting us on our way, the only positive thing the wind did for us all day.

I called the forecaster, who said it should be clear enough to land within 30 minutes. Could we hold?

The FE worked the numbers as my copilot called the tower and asked them to tell us the minute the weather lifted so we could try another approach. We climbed just above the tops of the clouds at 8,000 feet and circled. It was comforting to see the sun.

An hour later, it was painfully obvious that the weather wasn't about to change. With 5,000 pounds of fuel left there was nothing to do but land in the whiteout area.

In Antarctica, the weather has a way of limiting your options. At the end of that short list is a whiteout landing. The whiteout-landing area is a pie-shaped patch of real estate marked by two tacan radials out to 10 miles. Winds were still gusting from grid northwest as we started the tacan approach to enter the whiteout area.

Passing through 1,000 feet, we started on our wild ride. The wings rocked, the nose pitched, the engines clawed at the air, airspeed jumped wildly, and everyone fought not to throw up as I wrestled with the controls. From the darkened cockpit, my crew made polar backup calls—airspeed, altitude, rates of descent, drift. I could hear them, but they seemed foreign, out of place, wrong.

Unconsciously, I made the corrections. I tried thinking about something else. Was my car OK, still parked at my copilot's house in California? What did I have to drink back in my room? Had I remembered to update my will recently?

The tacan needle swung from one side to the other till we passed the transmitter. It trailed off, pointing to the left as I did the best I could to stay to the right, at 300 feet, 135 knots.

Abeam the transmitter, our navigator started timing. Thirty seconds later, he gave me a heading into the whiteout area. The wind wavered back and forth blowing from 280 to 300, still at 40 knots. We had to make only a small correction before we aligned ourselves with the longest section of the whiteout area.

Splitting the difference, trying to hold a heading of 290, we zeroed out most of the drift.

The whiteout-landing procedure called for me to descend at 200 fpm, but all I could do at this point was to try to approach that rate. Once I was set up for the landing, I relinquished control of the power levers; the copilot would have to keep the airspeed close. I had my hands full wrestling the yoke to keep the wings. My arms were getting tired. We had about 12 miles in which to land the plane. Beyond that, we risked running into a crevasse field, or if we drifted too far right, White Island.

"One hundred and thirty-five knots," the copilot said, "three hundred feet down."

The FE added, "One hundred feet."

"Zero drift," from the nav.

The copilot added, "One hundred and forty knots, level." (No descent.)

"Seventy-five feet," the FE called.

"Zero drift, seven miles till we're out of the area," the nav said.

"One hundred thirty knots, down two hundred, fifty feet," my copilot reported.

Wings jerking, me flying as if I was milking a cow.

"Five miles to the edge," the nav called.

"Anybody see anything?" I asked.

No reply.

The tower controller called, "Are you on deck?"

"Turn off that damn radio," I snapped. Cont'd. on page 33.

PH1(NAC) Edward G. Martens

Two Seconds, Ni

by LtCol. Peyton DeHart

THE COMMANDING OFFICER OF AN HMLA had just flown his Cobra vertically into the ground at Fallbrook Naval Weapons Station, just short of Camp Pendleton. Some of our pilots found it hard to believe that two experienced pilots flying as Dash 2 during a section approach would prang it in on a cloudy, but otherwise calm night. I was not among the disbelievers. I knew exactly what had happened, because I had flown that very profile—except for the last two seconds—nine years earlier.

AH-1W SuperCobras had been having a problem with water seeping into the ventral shark-fin antenna. Until the antenna was replaced or dried out, it could only broadcast and receive within 500 feet.

On the flight line, you could talk to the tower fine. But a call to a destination tower from 10 miles out would be greeted with silence. If you were Dash 2, you figured that lead was picking up a number of calls that you weren't. But since you could always talk to lead, the radio seemed to check out good. It would continue to work "perfectly," even in combat spread, but no farther.

I had made just such a diagnosis during a workup flight. The aircraft I was flying was Dash 2. Lead handled all calls to ground and tower and handled all en-route comm to get us from Camp Pendleton to a range at Twentynine Palms (whose responses we didn't hear). We carried 20mm, 2.75-inch rockets and a 100-gallon aux tank. After a night shoot, we would be returning just before the field closed.

The usual marine layer lurked offshore as we departed Camp Pendleton. It topped at about 1,200 feet, and the bottom was solid at 800 feet, only 400 feet thick. No problem, especially if it remained offshore.

We flew to Twentynine Palms, shot, and headed home. Lots of gas.

Crossing Banning Pass, we found the marine layer had spread almost as fast as we had been flying. The entire Temecula Valley was solidly overcast. No point in going under the eastern edge of the layer, because the surrounding terrain rose up into it on all sides. Lead verified that Camp Pendleton itself was severe clear under the layer. We had enough gas for two approaches there and another at an alternate. We didn't have enough to get back to Banning Pass once we were over Camp Pendleton.

During the hop, the problems with the radios finally became apparent, but it didn't seem like that big a deal. I also realized the tacan worked

ne Years Apart

fine, as long as it was within two to three miles of the station. I was a little late in realizing this because it had "checked good on the ground" at Camp Pendleton, and we were navigating off the map to get to Twentynine Palms.

As we headed back to the field after the shoot, I had several things going against me: a radio that only worked out to 500 feet, a tacan that worked within two miles of the station, not enough gas to be able to fly VFR back to where it was CAVU, a 400-foot, thick marine layer, a field that was closing soon, and unexpended ordnance still strapped to the wing.

What I had going for me was a competent lead and another competent pilot in my Cobra.

Knowing that we needed good night-formation flying skills, we took off our goggles. I took up a parade position on lead's right side. He got the GCA pickup over Temecula (though I couldn't hear the controller) and drove straight for the field. At about the edge of the Fallbrook Naval Weapons Station, he was on heading and on glide slope as he began his descent. His formation lights and position lights were up full bright as he sliced through the cloud tops and continued to sink. I watched him get fuzzy and nudged in a little closer on the parade position. His aircraft outline disappeared, but I could still see the lights.

Seconds passed. When the lights started to get fuzzy, I felt like I needed to move from the "real close" parade position to the "overlapping blades" parade position. I kept a tight grip on the cyclic, spring-loaded to break right if necessary. But I really needed lead to do the talking for me; the layer was only 400 feet thick.

The cloud layer thickened and cut the fuzzy lights down to a single white taillight. I stared in disbelief for two seconds before I remembered that you couldn't determine closure rate from one light. As close as I had been when I last saw all the lights, I couldn't afford any closure. I broadcast, "Breaking it off," and tried to transition from the VFR, welded-wing, formation-flying scan to one for instruments. While my head was still turned left looking at the

single white light, I had, by hand position and seat-of-the-pants, begun a right climbing turn to avoid hitting lead. In a turn already, I swiveled my head to the right and tried to scan the gauges fast enough to determine position and attitude. But I just couldn't do it.

My brain registered "tilt," my eyes rolled, and my hands wouldn't do what I wanted them to. We were 20 degrees nose up, in a 30-degree bank, and the airspeed was plummeting.

I had briefed my first-tour copilot that there would be a three-way switch on the controls preceded by, "Whenever you're ready, you can take the controls." What he heard was, "Take the controls now!"

The urgency in my voice let him know he had to take control immediately, which he did. In two seconds, he showed I had given him a worse case of vertigo than mine. We approached 50 degrees nose up, 50 degrees angle of bank, and the airspeed gauge dropped to zero. Fortunately, I had spent those two seconds scanning the gauges and hadn't made any gestures with my hands. Many of the cognitive disconnects vanished; I could make sense of things again. But the gauges said we were two seconds away from dying. We were about to roll over and either mast bump or drive straight into the ground at the weapons station.

Having had the world come back into focus during those two seconds, I deviated from the brief again by saying, "I've got it!" and grabbed the controls. I tried correcting for unusual attitudes and set the instrument takeoff (ITO) profile. The gauges reacted as expected, the aircraft responded as expected, and, at 1,200 feet MSL, we shot out of the cloud layer like the airliner did during the opening scene from the movie "Airplane."

Once on top, we had a billion-star bright night, with a clearly defined horizon. Knowing the aircraft radios wouldn't pick up the tower, we weren't disappointed when we tried anyway and they didn't. I pulled out my PRC-90 and asked for a GCA on Guard. I explained I needed a GCA because my tacan wasn't working well enough to shoot the non-precision approach. Camp Pendleton was very obliging. I was the only traffic they had at the moment (because the field was supposed to close right then). We wheeled around the pattern as vectored and once again dropped into the clouds. With no distractions, instrument flying was easy, and no hint of vertigo returned. Every few seconds, I heard, "On course, on glide slope," as we descended for home.

At this point, anyone remotely familiar with the GCA equipment at Camp Pendleton in 1989 will have keyed on the phrases "needed a GCA" and "marine layer." The GCA gizmos worked fine in VFR weather, not IFR. While still in the clouds, on the PRC-90, without enough gas at this point to fly to VFR conditions, the voice in my ear said, "Radar contact lost. Execute a missed approach and climb to 3,000 feet."

I stared at the gauges for two seconds, but wondered what I would do once I had made a missed approach. In the space of those two seconds, the tacan needle that had been spinning merrily the entire flight, locked up on the right radial, 2.5 DME. The GCA had brought me in close enough for the tacan to start working. I broadcast on Guard that I would continue with the published tacan approach, and 200 feet later, I broke out under the layer and landed. We dearmed and downloaded. Lead's debrief to me was that after my "breaking off to the right" call, he didn't hear anything from us again.

That's the last thing the other lead heard his CO say, too, just before the skipper went in. Since that mishap, our H-1 community has grown leery of shooting section approaches through actual IFR conditions. Though there are times when we might want to fly through the IMC, and times when we might need to fly through it, section approaches can turn ugly… in about two seconds.

LtCol. DeHart flies with MAG-42.

I Never Wanted To Be a Boatswain's Mate

by Lt. Todd Lepper

OUR DET WAS IN THE UNIQUE POSITION of being forward deployed in a ship other than the one we worked up with.

After we launched the aircraft, the flight-deck crew brought out the hoses and started setting up the HIFR rig for the required practice HIFR with the new ship. They were taking their time, and I wandered out to the flight deck to check on their progress.

The nozzle was attached directly to a saddle fitting, and the other saddle was hooked to the deck with a short section of hose between two long hoses.

Now, I'm not a BM, and I wasn't sure how to set up a HIFR rig, but this setup didn't look right. I brought out a copy of NWP-42, which has illustrations of the rig. After consulting with the deck crew, I convinced them to start over and use the diagram. They had rigged the hose backward, and the breakaway fitting was down on the flight deck. There was also no 10-foot section of hose to plug into the cabin, so all the weight of the hose would have been borne by the HIFR fitting instead of the hoist. The implication was that if we needed an emergency breakaway, we would have been dragging 100 feet of hose behind us. That's assuming the hose didn't tear from the HIFR fitting first and spray fuel inside the cabin.

There are two lessons to take from this experience. First, always question the experts if something doesn't look right. As the air department, we are responsible for all aspects of flight-deck operations and safety, including improper rigging or procedures.

Second, we assumed the flight-deck crew was proficient, and we waited until we needed to see them demonstrate that proficiency. We didn't know that many of the crew who worked on the flight deck when the ship received its alpha qualification had transferred. Although the ship was qualified, its current crew wasn't. If we had needed to actually do an HIFR for an emergency, the ship would not have been prepared.

Lt. Lepper flies with HSL-49.

OUT for Writing

by Lt. Brent Johnson

OUR AIR WING WAS EMBARKED on a six-week trip to conduct the annual fall exercises. We were about to pull in for a quick, four-day port call and were flying a few afternoon and evening events to ease the CQ requirements we'd face after leaving. We were scheduled for a triple-cycle hop. The weather at launch had been low clouds and occasional rain, and the recovery weather was not forecast to change very much.

The first two cycles went smoothly. As the air wing headed back for the last day recovery, we began moving our station a little closer to the ship. Strike advised us that the rest of the flight schedule had been cancelled. That was unusual, but we weren't worried.

We had heard nothing over the radio to indicate any serious weather problems, and a day straight-in is preferable to a night straight-in anytime; at least that's what I thought. Marshal was uneventful. We hadn't even made a complete lap before we got the manual push.

Leveling off on the Case III, only one aircraft had gone around ahead of us. The ride was smooth. Our only problem was a heavy rain that made it hard to see. We figured it would clear up as we got closer to the ship, but it didn't.

Even with the Hummer's automobile-style windshield wipers slappin' away at their maximum speed, we had no forward visibility. To make matters worse, Bullseye (carrier ILS) had been down for quite a while, so we pressed on with the tacan approach as we waited for the ACLS to lock up.

At four miles, we received a good landing check light, indicating that we had a data link with the ship, and I waited for the ACLS needles to come up on my attitude gyro. They didn't.

CATC tried their best with the equivalent of an ASR, but no joy. We waved off well inside a mile, never having seen the ship.

The second pass was similar to the first. Again, no needles, no visibility, and no ship, although we glimpsed some lights. By this time, I was beginning to run through my options. Our divert was relatively

Even with the Hummer's automobile-style windshield wipers slappin' away at their maximum speed, we had no forward visibility.

an Approach Story

close, and I had fuel for eight or nine approaches before I was down to bingo fuel. The weather also appeared to be breaking. All I needed was just one pass with light rain and decent visibility.

On the third pass, the rain had slackened, and I found one small spot about 3 inches square in the lower left corner of my windscreen that the wipers were keeping clear. At the start, I could see the ball, but as I got to the middle, I lost both the ball and line-up. Around I went again. Two more passes and still not aboard. I was frustrated and had both CAG paddles tag-teaming me with glide slope and line-up on each pass.

As I climbed out, cussing about the fifth pass, my day went from bad to worse. The starboard engine-fire light illuminated, and no matter how much I glared at it, it wouldn't go out. Although there were no secondaries, we treat all fire lights in the E-2 as the real thing. I quickly called the Air Boss, then we started on the NATOPS procedures.

As we were trying to finish up the boldface items, the radios lit up. My copilot, who by this time was as frustrated as I, ended that with a quick call, the essence of which was: "Leave us alone. We're still flying and will get back to you when we can."

As we wrapped up the emergency, the NFOs gave us our new bingo numbers. They had been backing us up nicely all afternoon and were on top of the single-engine problem right away. We were level at 2,000 feet, under control, well above bingo, and standing by for words. My copilot relayed our situation as I contemplated my new options. A few factors stood out. The biggest was, "Hey, I had been having trouble getting aboard with both motors." On the other hand, weather at the bingo was equally bad, and the field had no arresting gear or LSOs.

The fire light was still on, but I still had no secondaries. This problem, coupled with our notoriously unreliable fire-detection system, had me convinced there was no fire, but I still didn't want to fly 160 miles with a fire light.

Clearing weather at the ship made me decide to try a single-engine recovery. Meanwhile, down in air ops, they ran through the same process and

Continued on the bottom of page 21.

by Lt. Brent Johnson

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Continued on the bottom of page 21.

Three Blin

by Ltjg. Dick Vitali

IT WAS A TYPICAL DAY in the Arabian Gulf. We'd spent the last month familiarizing ourselves with the op areas and Operation Southern Watch missions. Our crew was scheduled for a typical ASR-RTNK (Armed Surface-Reconnaissance, Recovery Tanker) mission, usual tasking for the S-3. We did our standard NATOPS brief, each crew member read the book, and we all sat around in the ready room just hanging out.

The Cotac, Senso and I started to walk about an hour before the launch. We suited up in the paraloft, and as we were walking down the passageway, we ran into the pilot. He said he would meet us at the plane, which was located on the finger forward of the LSO platform.

Being creatures of habit, we walked down to the starboard side of the ship and onto the flight deck. It was a beautiful September day, sunny and only 130° F. There was a recovery going on, and as we passed the island, a Hornet trapped, going into burner as it slammed onto the deck. We walked toward the aft end of the ship and saw our aircraft on the other side of the landing area. No big deal. All we needed was permission from the arresting-gear officer to cross the flight deck.

We were standing in front of an ES-3, whose nose and canopy blocked our view of the aft end of the ship. We were squatting and had our eyes fixed on the gear officer through a 3-foot space between the flight deck and the ES-3's nose.

The Senso was closest to the gear officer and motioned for permission to cross to the other side. The gear officer gave him the hold signal.

As we continued to focus on the gear officer, another plane trapped. He still gave us the hold signal and continued to make sure we didn't cross the foul line. A Prowler was on downwind and had just started its turn toward the boat. The arresting-gear officer (AGO) began waving his hand, and we got up and started our journey to the other side.

The Prowler was at the 90. We had about a minute to cross the 125 feet of landing area. We started trotting toward our plane.

Halfway across, the Senso and I looked aft and saw a Hornet on short final—the scariest sight I'd ever seen. We either had to run back to the starboard side or continue straight ahead to the plane. We chose the latter and ran the fastest 20-yard dash of our lives to the other side of the landing area. Apparently, the Prowler had been waved off to make way for a Hornet with an emergency.

The Cotac had his head down and continued to walk through the landing area. He saw us running like mad and was baffled until he saw the Hornet bearing down on him. He also began sprinting. The LSOs were completely bewildered as they saw us.

The Boss shouted over the 5MC, "Get out of the landing area!"

We all made it across the foul line, but the LSOs wisely waved off the Hornet. We all stood there, embarrassed but happy to be alive. Then we began to point our fingers across the landing area to the AGO who had waved us across. The pilot had chosen wisely and walked inside the ship to the port side, then up onto the finger.

It turned out the person who waved us across was a trainee. His trainer was by his side but not watching him at the time of the incident. Later that day, our tower rep told us communication between the tower and the AGO had broken down. Tower hadn't told him that the Hornet was dragging and would be a trap. The gear officer assumed the Hornet was at 800 feet inbound for the break and did not consider it a hazard.

We learned several lessons from this experience. First, the best path to your aircraft may not

d Mice

always be the most expeditious. It's also a good idea to include the position of your aircraft and how to get to it as part of your brief.

Second, when you're on the flight deck, you have got to keep your head on a swivel at all times, especially during flight ops.

Finally, never lollygag on the flight deck. If this had been a night recovery, no one may have seen us, and we might have been splattered across the flight deck.

Ltjg. Vitali flies with VS-35.

Letting people cross the landing area has always been a hard juggling act. Some don't understand the need to cross aft of the 1-wire. This point gives them time to cross while the wire is being retracted, and they won't be in the bight of the cable. A lot more people misconstrue the clearing-the-deck signal (AGO's left hand raised vertically and swept down and up in an arc to waist level) between the AGO and gear-puller, as permission to cross—which it isn't. The signal to cross is a quick, circular motion of the hand, followed by a horizontal motion indicating the direction of the crossing.

In this particular incident, the author said the trainee gave the signal to cross. If this carrier was like most ships, the trainee may not have been wearing a hydra headset, just mickey-mouse ears. So, even if word had been passed about the next aircraft being the Hornet, the trainee wouldn't have heard it. He probably thought there was enough time for the crewmen to make it across.—LCdr. Mark Enderson.

LCdr. Enderson was a catapult and arresting gear officer aboard USS *Theodore Roosevelt*. He is currently the head of the Naval Safety Center's aviation publications department.

Groundhog Day

by Lt. Matt Testerman

AT 0230, THE SKY WAS CRYSTAL CLEAR, and the moon was bright. The last flight of our crew's detachment to Souda Bay, Crete was a mission we had flown so many times before that the crew referred to the 10-hour flight as "Groundhog Day." The skipper was aboard as the EWMC. It was also the last mission in the squadron for the aircraft commander.

The EP-3E Aries II has 24 ditching stations. Aft of the flight crew, the mission crew sits in single file from stations 5 to 19 (an arrangement that some have compared to a slave galley). As the senior electronic warfare tactical evaluator (SEVAL) under training, I was at ditching station 13, which is opposite the starboard over-wing exit. My station had an altimeter, but no airspeed indicator or windows. When we landed, the tube was dark, and I was looking at the back of the head of the special evaluator at station 14.

From my station, the landing was not unusual. I listened in on the ICS as the AC coached the copilot through the approach to touchdown. As the EP-3 rolled out, the aircraft swerved, but that wasn't unusual, and the pilots worked to maintain centerline. Then the AC announced, "I've got control."

Another swerve to the left and then an enormous correction to the right. It felt as if the aircraft was in a power slide, probably because the port mainmount was actually sliding through the dirt on the left side of the runway. There was no doubt something was wrong. When I heard a pilot call, "Hold on," I braced for the crash. The aircraft slid back across the runway, then off on the right side. Another severe correction—this one back to the left—and again it felt like I was in a sports car rounding a corner too fast. I saw the special evaluator at station 14 press his head back against the

in Souda Bay

seat, and I thought that was a good idea and did the same.

The first shock was not as bad as you might imagine for a 100,000-pound aircraft leaving the runway at approximately 80 knots. Then an old, concrete, machine-gun bunker sheared off the port mainmount. My headset flew off, hitting the seat back of station 14. A 20-pound toolbox and the 10-pound crypto box slid out from where they were stored, becoming missiles in the tube as the aircraft left the runway.

The toolbox hit the petty officer at station 19 hard enough to give him serious doubts about his ability to move his legs. The crypto box struck the back of the flight engineer's seat just below the headrest. A parachute hit the secure-communications operator at station 4 when it came off the bulkhead behind him. The galley trashcan came loose from its straps and, along with

The galley trashcan came loose from its straps and, along with the now-detached (and full) urinal buckets, created an obstacle to those aft of station 18.

the now-detached (and full) urinal buckets, created an obstacle to those aft of station 18.

The aircraft shuddered as it plowed across the rocky terrain. Then, all motion stopped, and the aircraft was dark (so much for emergency lighting being activated by 1.5 G's). I still don't know if the loss of power came from the generators or as a result of the flurry of engine-shutdown procedures going on in the flight station. Whatever the cause, there was no power available for either ICS or PA.

From up toward the flight station, someone said to evacuate the aircraft, then yelled it a second time. I heard no mention of fire, and I proceeded directly to the starboard over-wing hatch. I removed the hatch, passed it back, and was out on the starboard wing. I slid down the flap into a ditch and helped others until one of the aircrew said he was the last man. At least one other crew member also believed that he had been the last man and though the SEVAL tried counting heads, the two-exit evacuation made the effort futile.

We walked about 40 yards away. At that point, an aircrewman drew our attention to the fire on the No. 1 engine. Flames climbed higher than the vertical stabilizer, mixing with the dust from our crash to create an eerie, glowing haze around the aircraft. We quickly moved farther away.

The NATOPS procedures for a ground evacuation were complete as 24 of us stared in disbelief at the wreckage of Ranger 26.

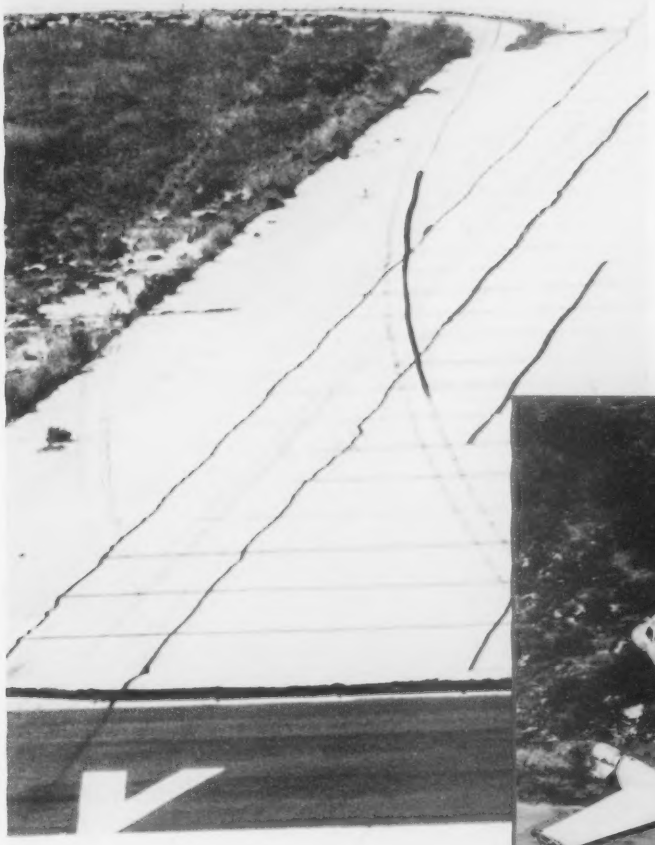
We verified that all crew members were present. We checked each other for injuries, finding only minor cuts, bruises, and some lightheadedness from the adrenaline rush and shock. The station-17 special operator had grabbed a first-aid kit on his way out. We turned on the flashlights on our SV-2s to keep from being run over by rescue vehicles. I activated my strobe light, but it failed after two blinks.

The third pilot tried to call the tower and rescue team. Then he checked each crew member's PRC-90 to find an active guard beacon. Somewhere between exiting the aircraft and assembling the aircrew, I had removed my survival radio and activated the beacon, an unnecessary and confusing action. The third pilot told the tower there was no one on the aircraft and no serious injuries. He also relayed our position.

What did I learn from this experience? First, good training pays off. Our entire crew evacuated the plane in an orderly manner, and, though we were scared, no one panicked. The man at Station 17 was on his first mission flight, as a trainee, and he automatically grabbed the first-aid kit because he had been shown how to do it during a ditching drill we had conducted earlier that same flight.

Second, NATOPS does not cover all aspects of an emergency. The loss of power knocked out the PA system. Many of the aircrew did not hear the call to evacuate, and fewer still heard any call about which side of the aircraft to use. It still is unclear whether the No. 1 engine was on fire when five crew members exited from the port side. During the debrief, the navigator-under-training, and first man out the port side, said that it hadn't been on fire when he went out.

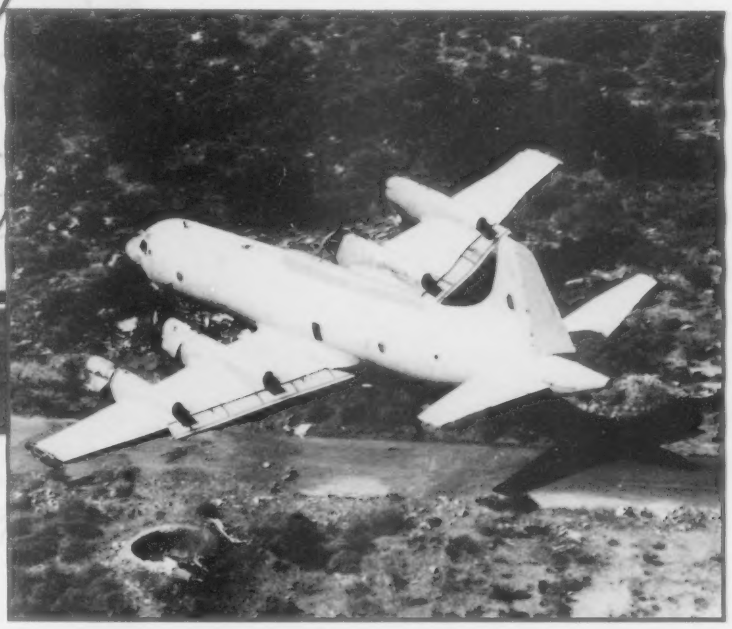
NATOPS suggests using all available exits at the direction of the pilot, normally opposite the side of the fire. What do you do in his absence? If you have one foot on a wing that is burning, do you head for the flap or climb back in to exit out the opposite side? The emergency is only half over when NATOPS says its final word: "Assemble well aft of the aircraft." Then what? While the evacuation almost ran on autopilot, once we were assembled, we had to evaluate the situation before proceeding. We had briefed to contact tower on 243.0 during our crew work-ups and before each flight during the plane-side brief.



Finally, I learned the importance of preparing the cabin for takeoffs and landing. Switching to red lighting was important, because our eyes didn't have to adjust to the loss of power on the aircraft. With 24 aircrew on missions that typically last more than 10 hours, there is also a lot of personal gear on board, from helmet bags to duffel bags full of food. We also bring an average of six-to-eight locked boxes. Storage space is tight, but it is essential to secure all gear. Before evacuating, the SEVAL looked up and down the tube and couldn't determine if anyone was buried under all of the loose gear.

The last flight of Ranger 26 has given me a different perspective on flying. Any landing you can walk away from is still a good one, but I know now that walking away from the next landing has to do with more than trusting the single-anchor guys. It depends on how the crew is trained, how the cabin is prepared, and how well I am prepared to work beyond NATOPS.

Lt. Testerman flies with VQ-2.



BRAVO Zulu

BZs require an endorsement from the nominating squadron's CO and the appropriate CAG, wing commander or MAG commander. In the case of helo dets, the CO of the ship will suffice. A squadron zapper and a 5-by-7-inch photo of the entire crew should accompany the BZ nomination. Please include a squadron telephone number so we can call with questions.

Capt. David J. Park

VMFA-212

En route to Guam on a post-deployment transpac from RAAF Tindal, Capt. Park saw a left AMAD-pressure caution several minutes after his second aerial refueling. One of his flight members checked him out; then Capt. Park discussed the problem with the other pilots and a maintenance rep on the KC-10 accompanying the flight. He secured the left generator and the left engine according to NATOPS.

Capt. Park was now single-engine with three external fuel tanks, a FLIR, four wing-mounted pylons, and 16,000 pounds of fuel at 24,000 feet. The nearest suitable divert, Palau, was nearly 500 miles away. Without using the afterburner, Capt. Park's top speed was 185 KIAS at military power.

As the rep aboard the KC-10 confirmed single-engine bingo numbers for the divert, Capt. Park maintained 230 knots with minimum afterburner. The KC-10 crew recalculated fuel figures for Guam for the entire five-plane flight at the slower airspeed of 230 knots.

Capt. Park continued single engine until all his external tanks were empty and his internal fuel was at two-thirds. He then restarted his left engine to have enough power for aerial refueling. He took only enough gas to have enough fuel to land at the divert. After refueling, he secured his left engine again.

As he began his descent to the tiny airfield on Palau with only an NDB approach and no arresting gear, Capt. Park followed NATOPS by trying to restart the left engine but was unsuccessful. He had to rethink his options; the only other suitable runway was Guam, more than 700 miles away. Capt. Park continued his approach and made a single-engine landing. The rest of his flight circled at 25,000 feet until Capt. Park and a wingman were on deck. The three remaining airborne Hornets then headed for Guam.

A postflight inspection of the left AMAD revealed that a seal between the AMAD and the power-turbine shaft had disintegrated, causing the AMAD to lose more than three-fourths of its internal oil. The left air-turbine starter had also sheared. Both components had to be replaced. Malfunctioning AMADs have caused fires in the FA-18.

Ltjg. Russell Maynard

VFA-97

During a tac turn on a day, 2 v 2 ACM flight off the coast of Hawaii, Ltjg. Maynard heard a bang followed by an "engine right" voice caution and the sounds of an engine spooling down in his FA-18A. He knocked off the intercept as he pulled the right throttle to idle. In quick succession, he noticed a right stall caution, a right bleed-warning light caution, and a right fire light.

Following NATOPS for an in-flight fire, Ltjg. Maynard pulled the right throttle to off, pressed the fire light, and expended the fire extinguisher. Then he told his flight lead about the problems. Lead reported smoke coming from Ltjg. Maynard's right engine. As the flight returned to USS *Carl Vinson*, Ltjg. Maynard's left fire light illuminated, and the EGT on the left engine began to rise, although it remained within limits.

Ltjg. Maynard again told his lead as well as CATCC of the problems with his left engine. The leader of the other section involved in the intercept had joined the flight and reported that the left engine did not appear to be on fire. He did say that the right engine-bay door looked charred and that there was a hole where the fire had burned through the door.

Approaching the ship, Ltjg. Maynard lowered his flaps to half. A flight-control system caution appeared, identifying a split between the leading-edge flaps.

After determining that the aircraft could still be brought aboard the carrier, Ltjg. Maynard extended the gear using emergency procedures. He recovered, flying an OK underlined pass to the 3-wire. As he trapped, pieces of the destroyed right engine flew from the intake and from under the engine bay onto the flight deck.

This class A flight mishap is under investigation.

OJT for Writing an *Approach* Story Continued from page 13.

decided to give me one more pass, then divert me if I couldn't get aboard. We hooked back in for my sixth pass of the afternoon. The rain had slackened enough to give me some visibility, and I finally trapped. It wasn't my best pass, but we were aboard.

A few things contributed to this story's happy ending. First, our crew coordination was excellent. My copilot backed me up on both the self-contained approaches and on the single-engine emergency. The CIC crew did a great job with calculating our bingo numbers, helping us during the EPs and with the radios.

Second, paddles did a good job of talking me down on each pass and keeping me from getting too frustrated. A bit of irony struck me as well. Several years ago, a story in *Approach* prompted a lively debate about securing engines because of fire lights that seemed to be false indications. ["*Red Means Stop*," *February '94*] At the time, I wrote an article in which I used the case of a fire light in bad weather at the boat to illustrate my point. ["*The Horse That Refused to Die*," November '94] Little did I know that a few years later, I would find myself in that exact position. In this case, I didn't hesitate to shut down the engine. I had more than enough fuel for a few more passes and a bingo, and I had a decent divert available. In other circumstances, such as blue water, turbulent air and low fuel, I might have waited for secondaries before I secured it.

You have to weigh the risks of securing the engine against the risks of not shutting it down. This time, it seemed more prudent to secure the motor. I hope I never have to make that decision again.

Lt. Johnson flies with VAW-115.

Fuel-Burn

PH3 Timothy Smith

At one point, it looked like we were losing 60 pounds a minute. At this rate, the aircraft could stay airborne for another 50 minutes before the engines flamed out.

by Lt. Blake Eikenberry and Lt. Tim Rascoll

WE BRIEFED AT 2000 for our two-and-a-half-hour plane-guard flight, which was scheduled for a 2130 launch after a hot-pump crew switch aboard the carrier. An HH-60H (used for CSAR, NSW, and Special Ops) was launching at the same time. Because we were flying an SH-60F (fully configured for USW), the two crews agreed that the HH would cover the plane-guard mission for the fixed-wing launch and recovery cycle so we could go play in a nearby USW exercise.

During our brief, we discussed how much fuel we would take on at the hot pump so our gross weight, combined with the OAT and DA, would allow us to hover out of ground effect. We needed to do that if we were going to use our dipping sonar without having power required exceed power available.

After a thorough brief, we were ready to go spank the sub.

The hot-pump crew switch did not go as smoothly, however. It is always a busy time when the two crews are swapping out. During the passdown, we usually focus on how the aircraft is flying, but we also discuss mission specifics, such as hot areas in the vicinity and the process of the hot-pump. This is where we dropped the ball.

As the refueling hose pumped fuel, neither the HAC nor the copilot noticed that the fuel page of our individual display units indicated the auxiliary tanks were

ip Problems

disabled, although the fuel could still flow into these tanks. The weight in those tanks doesn't show up in the fuel-quantity display.

When both pilots saw the displayed fuel (which only showed the main tanks at this point) approaching our prebriefed limit, we signaled the plane-captain LSE to stop refueling. As we went through the takeoff checklist we had to figure out our red-light time—the local time at which we would have approximately 1,000 pounds of fuel onboard—to give to the Air Boss. At this point, we finally noticed the auxiliary tanks were disabled. After enabling them, we saw that our takeoff-fuel quantity was much higher than our prebriefed limit.

Since the performance chart in the pocket checklist showed we still had plenty of power to take off, the HAC thought, "Big deal! We'll just keep the APU on to burn fuel more quickly. If we have to get in a dip any time soon, we'll dump fuel to get lighter." He had dumped fuel earlier in the day for the same reason and in the same aircraft.

We launched at 2150, an hour after sunset. Illumination was zero percent. After completing the post-takeoff checklists and going through our many comm check-ins, we were ready for some USW. The crew we relieved had left sonobuoys in the water for us. We intended to use those buoys to find the submarine that was lurking out there and get off a simulated attack.

The ASO reported several intermittent contacts off two of the buoys, and he provided a best-guess fix. We bustered over to the spot to dip. During the pre-approach checklist, the HAC noticed we were still too heavy. The crew discussed this matter and decided to try the approach and wave off if we were close to not having enough power. We proceeded, turning on contingency power. As we glided through the dark into a 60-foot hover, power was just below max, and the HAC waved off.

Still thinking we could find the submarine, we knew that we had to dump fuel to have enough power to hover out of ground effect. We reviewed the procedures we'd briefed for the manual fuel dump: identify the CBs before dumping, and closely monitor the fuel level during and after the fuel dump.

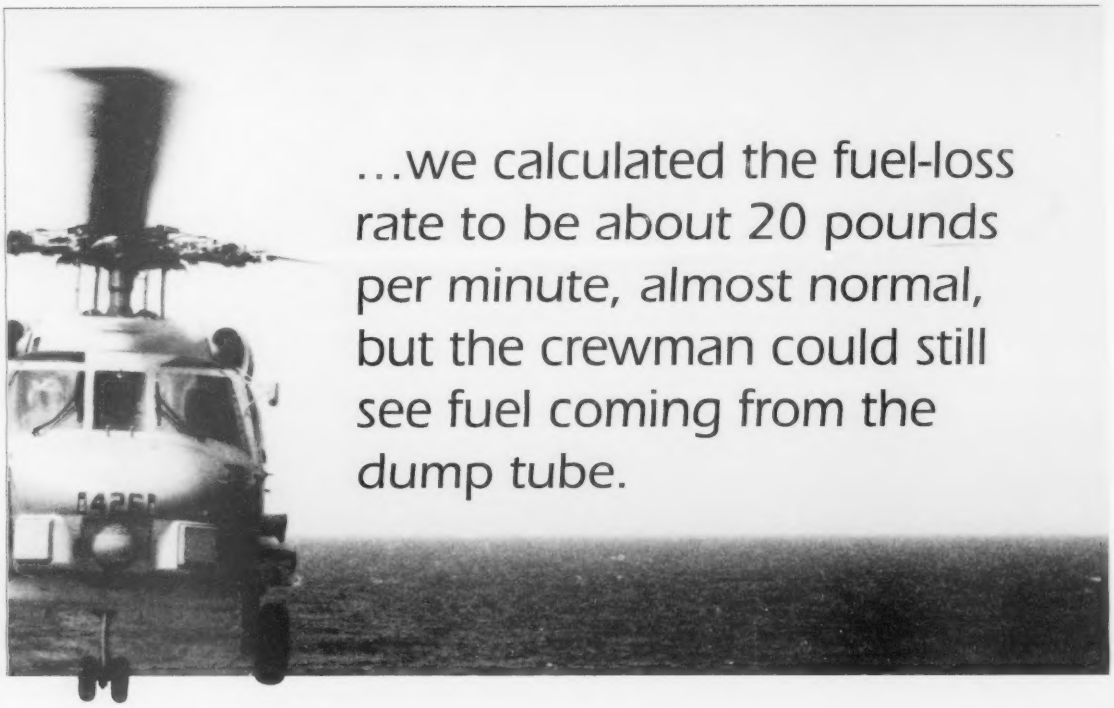
The HAC (in the left seat) identified the fuel-dump CBs, calculated the fuel we needed to dump to, and began the dump (we had about 4,500 pounds) as he and the crew in the back monitored the level. Fuel sprayed from the aircraft at more than 800 pounds per minute.

"Dumping secured," the HAC announced at 3,600 pounds, but something was wrong. The fuel gauge continued to drop. The HAC calmly pulled the three fuel-dump CBs and expected everything to return to normal. It didn't. A crewman stuck his head out the back door and saw fuel was still going out the dump tube.

The crewman started calculating a fuel-loss rate. The HAC tried to contact a small-boy five miles away; the PAC tried to call the carrier's tower (16 miles away) and the other plane-guard helicopter. No joy on any of the comms.

The fuel-loss rate was hard to figure, and it didn't seem consistent. At one point, it looked like we were losing 60 pounds a minute. At this rate, the aircraft could stay airborne for another 50 minutes before the engines flamed out. The carrier's fixed-wing launch and recovery cycle had started 10 minutes earlier and would be complete in another 20 minutes.

Not wanting to risk increasing the fuel-loss rate, we decided to keep pressing for a landing on the small-boy, which finally replied, "You can't land here at this time; the deck is clobbered with our helo."



...we calculated the fuel-loss rate to be about 20 pounds per minute, almost normal, but the crewman could still see fuel coming from the dump tube.

Even though we still couldn't talk to the carrier, we decided to head toward it because the small-boy reported that it would take 15 to 20 minutes to clear its deck if we were going to declare an emergency. We weren't declaring one—yet.

The only communication with the other helicopter was over the HF radio, thanks to the crew chief. He could relay our state, and the other helo would tell the tower and a squadron rep stationed in the ship's USW module. We had enough fuel to go the 16 miles to the carrier.

Systems knowledge then started to flow across the ICS. The APU and the ECS were secured to save fuel. We flew the max-conserve airspeed. We then realized we had another problem: all of the fuel had not been transferred into the main tank, and the pumps used to transfer fuel were the same pumps used to dump fuel. At that point, there were only 2,200 pounds in the main tanks, which are the only tanks supplying fuel to the engines. At the current rate, this equaled only 30 minutes before flameout.

The HAC decided to reset the CBs so we could try to manually transfer fuel. After the transfer, we calculated the fuel-loss rate to be about 20 pounds per minute, almost normal, but the crewman could still see fuel coming from the dump tube. Once again, we pulled the circuit breakers.

It wasn't until about 5 to 7 miles that we could hear the other helicopter over UHF. It had been approximately 30 minutes since the launch and recovery cycle had started, we thought that it would be over soon. At the fuel-loss rate we now calculated, there was enough fuel to get us back on deck without declaring an emergency. What didn't help us was the fact that one of the Hornets was now clobbering the deck with two engine-fire lights.

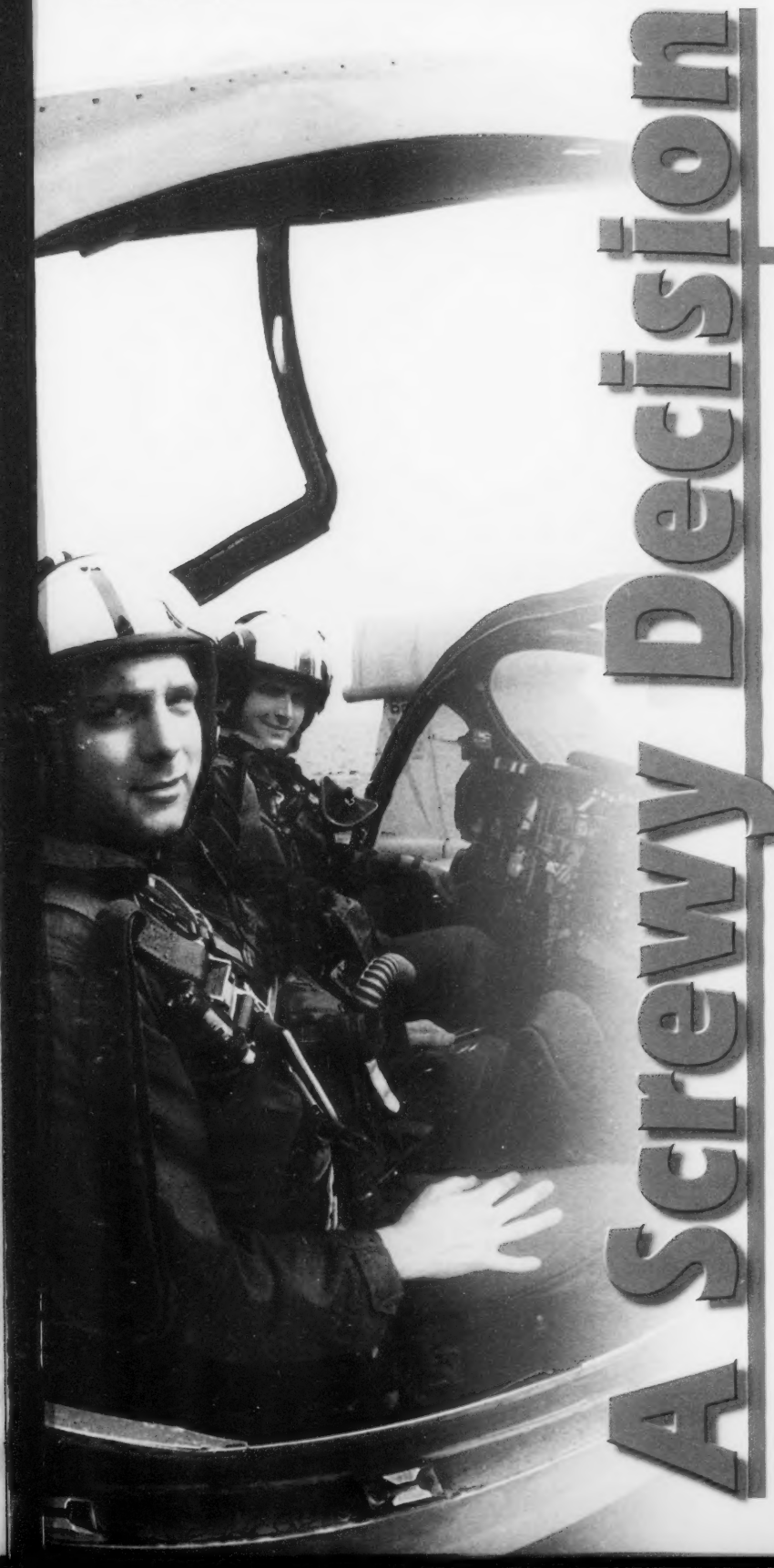
Expecting the worst at this point, we reviewed the planned-ditching checklist. If it reached the point where we only had 15 minutes before the engines flamed out, we were going to declare an emergency. We were only able to receive intermittent transmissions from tower, but the other helicopter could relay messages to us.

The cycle was nearly over, so we waited to recover, remaining at five miles to keep clear of the plane-guard helo. When the cycle ended, we headed in for a night, visual approach to the fantail. The plane guard kept clear of us by staying in front of the ship.

After we landed, the crash lights came on so we could inspect our helo. In the postflight, maintenance found a transfer-dump valve that was stuck open, allowing fuel to run out.

All stages of flight need to be thoroughly briefed. Don't dump fuel when you don't have to. We should not have remained five miles out to avoid interfering with the plane guard. We should have snuggled up to the carrier and told the plane-guard helo to stay clear of us.

Lt. Eikenberry and Lt. Rascoll fly with HS-15.



PHAN Neil H.F. Sheinbaum

A Screwy Decision

by Ltjg. Rob Michael

WE WERE OPERATING OFF OKINAWA during our annual fall deployment for exercises with Korea and Japan. It was only the second day of cyclic ops after CQ. I was slated for a simple detect-to-engage exercise with the USS *Kitty Hawk*'s missile batteries. More importantly, it was my first fleet instrument check. My pilot was the second most senior JO pilot, an experienced guy.

I had already flown that morning in Prowler 500 as ECMO 3 during an ESM-SSC mission to the Whiskey area where we would shoot a HARM the next day. I took a couple of pictures of a Group III tanker and found the emitter that would be the AGM-88's target. Since it was a beautiful VFR day, we did a few rolls here and there to break the monotony.

Afterward, I went to CVIC as usual. I was carrying my helmet. I set my stuff down and gave the spies the lowdown on what we had seen. We hadn't expected the HARM emitter to be up, but we'd gotten a lucky break. I managed to get some information for the HARMEX players the next day. Heck, even the skipper thanked me for finding the emitter.

I left CVIC, undressed, and went to grab some of that great grub they serve on the boat.

I briefed the event that night, went back to the dirty-shirt for some more chow, then went to suit up. I noticed the visor-lock knob on my 600-knot visor was missing the top screw. Our PRs had glued a piece of Velcro on top of the screw so no one would mess with it. As it happened, I was manning up for Prowler 500 again. Where was that screw?

When I'd gone to CVIC earlier, I hadn't noticed that part of my helmet was missing. Since our PRs put that black Velcro on the lock-knob screw and the knob is black, it might have been hard to notice. On the other

hand, I had walked to CVIC and back to the PR shop with my helmet off, and it could have fallen off anywhere.

We were in a hurry to get out to the jet. I wondered what I should do. I tried explaining it to my pilot in the ready room. I told him I didn't remember the screw missing when I went to CVIC, and we were using the same aircraft I had flown before. If I thought I had lost it in the ship, he said, we should get going. Several other people were sitting in the ready room at the time, and no one raised any concerns. I grabbed another lock-knob from one of my buddy's visors.

With the delay in the ready room, I was running behind. I managed to do my whole preflight, but I was the last one to strap in. I was still trying to get my shoulder straps untwisted as the pilot fired up the starboard engine. Between the humid night, the pressure to catch up with the rest of my crew, and the stress of the instrument check, I was sweating. I got all my stuff done, and we proceeded with our normal checks, but I was still feeling a little behind.

We started to taxi as we pressed on with the checks, sucking plenty of 02, which helped calm me down. As we pulled up to the cat, departure came up, "Five Zero Zero, switch button eighteen for a rep."

I paused, wondering what was wrong and why we needed a rep. I checked with my pilot.

"Did they say for us to switch for a rep?"

"Yep," he replied. I switched.

"Prowler rep, Five Zero Zero."

"Five Zero Zero, maintenance wants to know if all ECMOs have all the parts to their helmets." Everyone in the cockpit said they did.

"Prowler rep, Five Zero Zero, that's affirm."

"Understand, all ECMOs have all their parts?" he persisted.

"That's affirm," I repeated. We continued to the cat, spread the wings, and got dirty.

"Five Zero Zero, mainte
all ECMOs have all the
Everyone in the cockpi

The FDC was signaling to us, asking whether we were up or down, and I gave him the "go fly" signal. The next thing we knew, we're being spun off the cat, cleaning up and folding the wings.

Next the Boss called, "Five Zero Zero, tower."

"Go ahead, sir," I replied.

"Yeah, your maintenance guys thought you were down for possible FOD in the cockpit. They wanted to make sure no one was missing a part from their helmets. Are you guys good to go?"

"Yes, sir," I said, and we were taxied back to the cat.

I was sure the lock knob was not in the jet. Later, I'd have a chance to rethink this decision.

It was a good shot, and we climbed away for our detect-to-engage mission. It was uneventful except for screaming past mother at 1,000 feet, pushing five bills from our downhill drop as the DTE profile required. We bustered over to the marshal stack with little time to spare. As I worked the point-to-point for my instrument check, plane after plane called into marshal unable to make their push times. It was the last recovery of the night, but marshal just started doing manual pushes. We took our time and got set up in marshal with some breathing room. My pilot rode the rails to a sweet OK 3-wire. We taxied, shut down, and headed inside.

We found that ops and safety weren't happy with us. We had made a bad decision. We weren't sure where that part was, and we took that jet flying. Not only had I risked the lives of three of my friends, I could have lost the aircraft and my life, and I could have lost the skipper his job. The good news was that maintenance never found anything in the jet. They had to turn the cockpit inside out because we had flown a few inverted-flight maneuvers.

There's a good saying painted inside the hangers of VT-10 and VT-4: "If there's doubt, there is no doubt." If you're not completely sure that you don't have FOD in your cockpit, don't go flying. It's just not worth the risk.

Ltjg. Michael flies with VAQ-136.

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arts to their helmets."
said they did.

POP-UPS

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Simulator Physiology: Realistic Training for the Fleet

As a Huey pilot attached to a MEU(SOC), your mission is to resupply a recon team in the high desert and extract two injured team members. With a Cobra for escort, you launch from an LHA at maximum gross weight just after sunset and wear goggles on the way to the LZ. Your route takes you across a flat, featureless desert and a high, rugged mountain range, in low-light conditions. The landing zone is dusty and brownout conditions are severe. You pick up the Marines and turn seaward; there are few visual references and no discernable horizon. The flight reaches the ship, but halfway through your break to enter downwind, your copilot notices a chip-light warning...

An actual mission scenario? No—in this case, you're in a simulator, experiencing a new kind of aviation physiology-survival training known as "Simulator Physiology" (SIMPHYS). The new training is scenario-based, simulator-driven and has made physiology training more realistic.

SIMPHYS is not a new concept, but it has been officially used only recently. A two-month study at MCAS Camp Pendleton in 1996, using the AH-1W weapons systems trainer, validated the training. Full approval was then granted from the Naval Operational Medicine Institute's (NOMI) physiology model manager.

SIMPHYS training is in place only for pilots of the light-attack H-1 community. But programs for aviators in other aircraft, such as the FA-18, H-60, and P-3, may be on-line soon.

This training includes controlled flight into terrain (CFIT), spatial disorientation, midair collisions and stresses preventable factors found in a large number of helicopter mishaps. The simulator can also re-create mission-specific problems. For example, the front cockpits of some AH-1Ws lack basic flight instruments (VSI, radalt, radios, etc.), making instrument back-up and aircrew coordination challenging during critical phases of flight.

SYMPHYS also introduces students to new or modified ALSS equipment. An interactive CD-ROM is available to provide information about physiology and survival if students have more questions on any topic.

To find out more, contact your local physiology training unit.

Harrier FODed by Deck-Pad Lens

During a launch of four AV-8Bs, the last Harrier ingested the lens from a flight-deck pad light. The FOD was discovered during post-flight inspection.

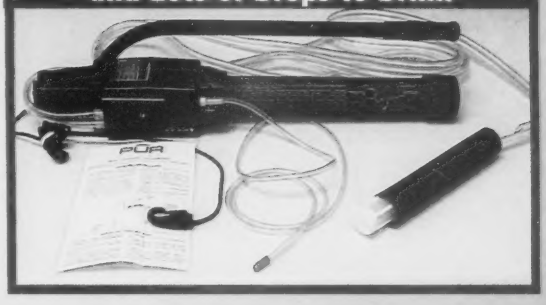
Inspectors found red-glass fragments from the lens in the launch area. An inspection of all flight-deck lighting revealed cracks in two similar lights.

The lights crack when aircraft take off, land and taxi over them. Intense heat from the Harrier's exhaust is another cause. Pad-light covers hide lens cracks most of the time.

The ship's captain recommended the following corrective actions (all of which have been completed):

- Limit consecutive launching of Harriers to reduce the risk of aircraft thrust blowing FOD directly into an aircraft engine behind it.
- Ship's electricians must thoroughly and regularly inspect all flight-deck lighting.
- FOD walkdowns on air-capable ships must include close inspection of deck lighting.

Water, Water Everywhere and Lots of Drops to Drink



Dying from dehydration while aboard a raft surrounded by water is a very real danger for aviators. Multi-place liferafts, until recently, carried only 10 ounces of bagged water per person—not enough if an extended SAR was necessary.

A new, hand-operated, reverse-osmosis desalinator (MROD) has been placed in all multi-place liferafts. This unit converts seawater or brackish water into drinking water. The water is drawn into the device and forced at high pressure through a semi-permeable membrane which filters out salt molecules, viruses and bacteria.

MROD is small, light-weight and designed to be operated by one person. It can provide 1.4 gallons of fresh water per hour, for 1,000 hours. Directions for using it are attached to the unit.

Maintenance at I-level or O-level is limited to visual inspection for damage or missing parts. Every four years MROD will be sent back to depot-level maintenance for inspection and repairs.

Do You Know Everything About Your Route of Flight?

In 1998 a HH-1N helicopter struck some wires, killing all 5 personnel aboard. This mishap occurred at almost the exact site of a civil aviation incident two years earlier. Do you know as much as possible about your intended route of flight? Look at the National Transportation Safety Board's web site: www.ntsb.gov/aviation/aviation.htm, which contains information on civil aviation mishaps.

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There's Got To

Approaching the merge, one of the Blue fighters turned sharply in front of an F-5, belly-up and blind.

by LCdr. Chris Chamberlain

WHEN I WAS AT THE NAVY'S Aviation Safety Officer Course at PG School, I was impressed by the way Army helicopter pilots used Operational Risk Management (ORM) to identify hazards, manage risks and make their operations safer. Then I returned to my squadron, picked up some ORM training materials and encountered a lot of "affinity diagrams," "logic trees," and "interface analyses." Confused, I put down the manual and opted for some reading material that was more digestable.

Let's face it. Even the most innovative ideas and concepts can be buried inside complicated, unattractive packages. It can be hard to appreciate the best points of a program when you have to do a bunch of "barrier analyses" to get anywhere. It wasn't until our squadron faced a real-life hazard that we learned how important ORM can be.

It started with one of our pilots flying a Strike-Fighter Advanced Readiness Program (SFARP) mission on the Fallon range. Approaching the merge, one of the Blue fighters turned sharply in front of an F-5, belly-up

r-Midairs Months:

Be a Better Way

and blind. The F-5 pilot instinctively did a negative-G pushover, and the resulting near-miss was measured later on the Tactical Air Combat Training System (TACTS) at 88 feet. Shaken, the F-5 pilot called, "Knock it off," and returned to base.

We were alarmed at how close we had come to tragedy. A lot of us had similar stories, and the more we talked about them, the more determined we became to do something, anything, to keep from getting "t-boned" over the desert.

Our risk decisions would not let us completely avoid the hazards associated with air-combat training and still accomplish our mission of high-quality, realistic adversary support. Some of us had been in the adversary business for nearly 10 years, and while avoiding midair collisions was part of the territory, we all felt that these near-midairs were happening with alarming frequency. Perhaps as aerial combat moved further into the modern, beyond-visual-range world, we were paying less attention to the mechanics of making safe merges during training. Perhaps, too, the F-5's small size in the point-and-shoot world of the AIM-120 was a factor. We weren't even sure how often it was happening.

Our safety officer took the first logical step in hazard identification: he started a near-miss log, which he kept in the ready room. To our consternation, we logged 10 near-midairs in the next six months, all inside the defined 500-foot safety bubble. By any measure, this risk was unacceptable.

An internal poll, or hazard assessment, confirmed our collective concern. Most of our pilots believed that the most likely cause of a future mishap would be a midair collision.

What could we do about it? We had to devise some controls. The first order of business was to simply let people know about the problem. We issued hazreps and told our pilots what they could do to negotiate the risk. As a squadron, we immediately began briefing the hazard. We included a list of recent near-misses. Nothing grabs people's attention like multiple, documented, TACTS-measured, inside-the-bubble passes (259 feet, 301 feet) and an illustration of the accompanying bogey's full-stick-deflection, bail-out maneuvers.

Next, we reemphasized our system of altitude blocks, to protect vertical separation at the merge. In recent years, such blocks had (in retrospect) begun to fall out of our scan,

We always tell the fighters, "Even when you think you see all the bogeys, there's almost always an extra F-5 lurking around the periphery of the merge."

perhaps reflecting the changing face of aerial combat in the age of all-aspect, active missiles.

Traditional methods (Fighter 0-4s, bogeys 5-9s, or fighters even, bogeys odd) of assigning specific altitude blocks for fighters and bogeys before the merge until tallies are made and situational awareness is developed will reduce the chances of folks smacking into each other.

All participants were strongly reminded to stay in their blocks until they established situational awareness. A 10-miles-from-the-merge "check blocks" call was encouraged when the battle problem had degenerated and people were losing their situational awareness. The "blocks" call was particularly effective during TACTS events, when the RTO at the console could monitor aircraft positions both vertically and horizontally and issue a preemptive reminder before aircraft got close to each other.

All our pilots—having had their attention repeatedly called to the problem—began approaching merges more carefully.

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Typically, that extra aircraft (usually trailing the formation) was the unfortunate one that had to unload, snap roll, or make a maximum-G turn to avoid swapping paint with a fighter turning hard for one of the bandits. "Assume the other aircraft does not see you," regularly briefed during daily Training Rules, became a "foot stomper." All of us worked harder to keep our heads on a swivel.

Our command monitored the results of our efforts; in ORM terms, we supervised our controls. We noted an immediate and measurable reduction in the number of near-midairs during the next few months. It's been quite a while since the last entry in our near-miss log. Although we know the danger is still there, all of us feel better about the steps we've taken to make the risk more acceptable.

Throughout the process, we received command support in enforcing all the controls. We encouraged pilots to end missions early when they saw a problem. I heard a phone call from our front office to an air-wing commander after three new entries in one week in our near-miss log.

We saw an immediate organizational shift in people's willingness to turn aggressively for the first bogey their pilots saw. In fact, that shift in attitudes is apparent in our ready room, as well.

No training is worth killing someone. That is ORM in a nutshell: accept risk when the benefits outweigh the costs.

LCdr. Chamberlain flew with VFA-132. He now flies with VFC-13.

McMurdo's Winter Vacation Package continued from page 7.

The FE called, "Twenty feet."

I was thinking. Where's the ground? I couldn't see anything! It was like jumping off a cliff into a fog.

Copilot: "One hundred twenty-five knots, level."

FE: "Ten feet."

Nav: "Three miles to the edge of the area. Better put this sucker down."

Zero feet on the radar altimeter and we're still not…

Boom! We hit. On the ground heading 295, sliding and slowing.

The wind kicked at the tail from about 270 now, and we began to weathervane, our nose swinging around into the wind. We slid sideways the last 10 seconds.

The power was at flight idle when we jerked to an abrupt stop. I looked around, and wondered if I look as ashen as the rest of the crew staring back at me. The loadmaster in the back crawled from his seat to throw up in the trash can. My hands were numb from gripping the yoke, but I was elated.

We had beaten the storm.

LCdr. Hinebaugh flew with VXE-6. He is now a member of the Naval Safety Center's reserve unit.

The wind kicked at the tail from about 270 now, and we began to weathervane, our nose swinging around into the wind. We slid sideways…